

## CLAIMS

1. A centrifugal separator including a centrifugal rotor arranged for rotation around a substantially vertical rotational axis (R), the centrifugal rotor having a rotor body (14), delimiting a separation chamber (15), and a pumping member (13), that is arranged to rotate with the rotor body (14) and to extend during the operation of the centrifugal rotor downwardly from the rotor body (14) and into a liquid body (5), situated under the rotor body, for pumping of liquid from the liquid body (5) into the rotor body (14),  
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## characterized in

- that the pumping member (13) on its outside has a pumping surface (31) facing away from the rotational axis (R), extending mainly rotational-symmetrically around the rotational axis (R) and being arranged to have contact with a free liquid surface on said liquid body (5) in an area extending around the pumping member (13),  
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- 20 that the pumping surface (31) on the outside of the pumping member (13), at least along a part of the axial extension of the pumping member in said area, has a generatrix forming an angle with the rotational axis (R) in a way such that the pumping member (13) along said part of its axial extension has an increasing diameter from below and upwards, so that  
25 upon rotation of the rotor liquid will flow upwards from the free liquid surface on the outside of the pumping member (13), and
- 30 that the rotor delimits a receiving space situated so that it receives liquid that upon rotation of the rotor has been brought to flow upwards from the free liquid surface on the outside of the pumping member (13).

2. A centrifugal separator according to claim 1, in which said generatrix forms an angle greater than 30° with the rotational axis (R).
3. A centrifugal separator according to claim 1, in which said generatrix forms an angle of about 35° with the rotational axis (R).
4. A centrifugal separator according to claim 1 or 2, in which said generatrix forms an angle smaller than 45° with the rotational axis (R).
- 10 5. A centrifugal separator according to any one of the preceding claims, in which the rotor body (14) during operation of the centrifugal rotor extends downwards to a level such that the rotor body surrounds an upper part of the pumping surface (31) of the pumping member somewhat above the free liquid surface.
- 15 6. A centrifugal separator according to any one of the preceding claims, in which the pumping member (13) has a continuous surface extending from the pumping surface (31) into a part of the receiving space of the rotor, which is arranged to contain liquid during operation of the rotor.
- 20 7. A centrifugal separator according to any one of the preceding claims, in which means are arranged to maintain a free liquid surface in the separation chamber (15) of the centrifugal rotor at a first radial distance from the rotational axis (R), said receiving space communicating with the separation chamber (15) at a second radial distance from the rotational axis (R) greater than said first radial distance.
- 25 8. A centrifugal separator according to claim 1, in which a driving device (11) for rotation of the centrifugal rotor supports the pumping member (13), which in turn supports the rotor body (14).

9. A centrifugal separator according to any one of the preceding claims, in which the separation chamber (15) has two outlets (23, 24) at different radial distances from the rotational axis (R) of the rotor for the respective of two separated liquids with different densities.